greater importance when used with a view to procure stocking material for the rivers and lakes in the Indian uplands for the development of sport fisheries.

CENTRAL INLAND FISHERIES
RESEARCH CENTRE,
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December 19, 1982.

C. B. JOSHI

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14. OBSERVATIONS ON THE BATHYMETRIC DISTRIBUTION OF HILSA LARVAE IN MIDDLE STRETCH OF RIVER GANGA NEAR ALLAHABAD

(*With a text-figure*)

Observations on the spawning of *Hilsa ilisha* (Hamilton) made by earlier workers in different rivers more or less explain the availability of eggs and larvae in surface and sub-surface layers of water. Karamchandani (1961) collected eggs and larvae of hilsa from Narmada river with the help of spawn collection net. Ravish Chandra (1962) used a surface tow net for collecting hilsa larvae from Hooghly Estuary. Pillay and Rosa (1963) observed that hilsa eggs occur in sub-surface zones, the juveniles inhabit the surface waters and the later stages move in deeper zones. But there is no information on bathymetric distribution of hilsa larvae excepting that of Ghosh & Nangpal (1968) who have determined the bathymetric preference of larvae while making collections with organdie ring net during winter breeding of hilsa in lower stretch of River Ganga. According to Ghosh & Nangpal (op. cit.), the larvae are available in surface and sub-surface layers in a total water column of 1.3 m but they have not given further split-up of this range showing depth limit. While collecting hilsa larvae from middle stretch of Ganga river, we recorded bathymetric distribution which has been given in this communication.

The distribution of hilsa larvae with regard to different depths was studied by operating a special net made of mosquito netting (1/16″ mesh), comprising three portions *viz.*, upper, middle and lower. It was almost like a set of three spawn collection nets stitched together vertically. Each of the three cod-ends of the net was tied to a cylindrical bucket of 12 cm length and 10 cm diameter, open at both the ends. The distal ends of buckets were blocked by a piece of organdie cloth to check the escape of larvae. Two bamboo poles were put at the mouth end and the three buckets, functioning at different depths, were tied to one pole at the rear end (Fig. 1). The net was 230 cm in length, 210 cm in width,

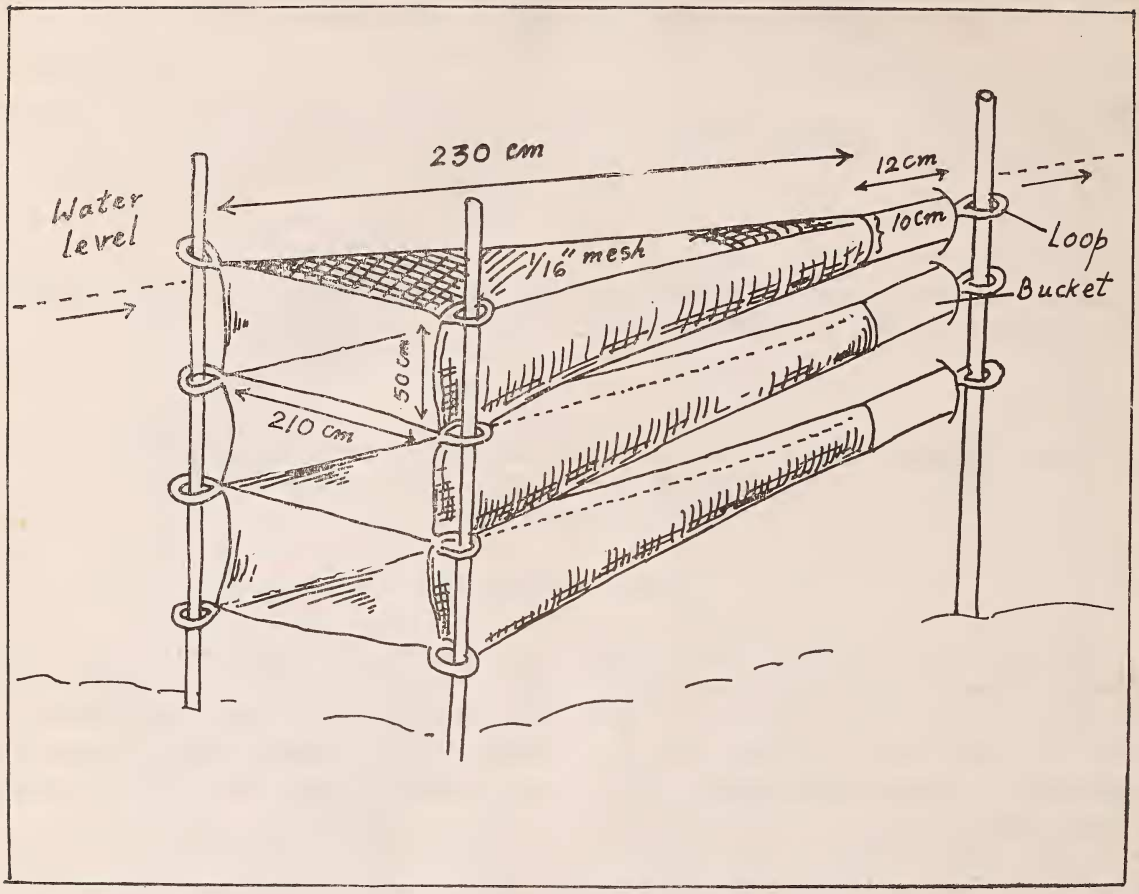

Fig. 1.

with a height of 50 cm at the mouth end and was operated in a depth of about 1.5 m.

The data collected on the availability of hilsa larvae in relation to water depth, during postmonsoon breeding of 1970 and 1971 at three centres in the middle stretch of Ganga river, are given in Table 1. The net was operated at each centre for a period of 6 hours from 10.00 a.m. to 4.00 p.m.

It is evident from the Table 1 that the larvae were more commonly encountered in the collections of upper and middle buckets thereby indicating their availability in surface and sub-surface depth ranging from 10 to 50 cm approximately whereas the number of larvae was insignificant in lower bucket i.e. in sub-surface depth exceeding 50 cm approximately.

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TABLE 1

AVAILABILITY OF HILSA LARVAE IN RELATION TO WATER DEPTH. (BATHYMETRIC DISTRIBUTION OF HILSA LARVAE)

Sl. No.	Date	Number of Larvae			Depth of operation (cm)		
		Upper	Middle	Lower	Upper	Middle	Lower
1.	23-10-70	12	6	Nil	18	32	58
2.	„	25	15	Nil	25	52	80
3.	„	31	14	3	22	42	68
4.	3-11-70	46	20	7	20	32	52
5.	19-11-70	17	9	Nil	24	48	75
6.	26-11-70	15	2	Nil	27	55	85
7.	26-10-71	1400	2250	25	20	40	65
8.	29-10-71	28	55	Nil	20	36	64
9.	30-10-71	1500	2700	20	25	50	83
10.	3-11-71	60	35	Nil	20	33	49
11.	4-11-71	75	95	Nil	10	30	48
12.	18-11-71	80	3	Nil	16	30	55
13.	29-9-71	18	10	Nil	20	40	60
14.	7-10-72	21	6	Nil	20	40	60
15.	15-10-72	32	16	3	20	40	60

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15. OCCURRENCE OF COMMON CARP (*CYPRINUS CARPIO*) IN TROUT WATERS

Common carp (*Cyprinus carpio*) was introduced and retained in a tank at the Trout farm, Mahili (Katrain), Kulu valley of Himachal Pradesh, on the left bank of river Beas. This was during the years 1958-1962. The fish were disposed of and attempts to culture them abandoned after finding poor prospects of breeding and growth in the cold waters. Only one breeding was managed in a spring-water fed tank at a temperature of 17.5°C. There was no trace of the fish or its progeny left thereafter, as the farm tanks had been completely cleaned and dried several times and the water supply cut off several times for long periods during the gap of 17 years.

Another private farmer on the right bank of the river Beas attempted the culture of common carp in 1969 after converting a marsh fed on spring water, in a temperature range 18°C-22°C which he has continued to prospect.

A strange occurrence took place during July-August this year. Three Common carps were caught in the torrential Beas (temp. range 6°C-14°C) which sometimes flows at above 3 metres per second velocity by a trout angler using dough and turmeric bait. During the same month another Common carp 24 cm long was collected from a drying-down channel of the same trout farm at Katrain from where the fish had been completely disposed of 17 years ago. The fish when collected was in a melanic form. After collection, this was transferred to a spring water source at 17.5°C temperature. Within a fortnight the fish reverted to its natural colour.

It is certain that the fish had travelled at least 3 kilometres in the torrential, cold Beas and crossed to the other side to reach the site where it was collected, besides the journey it must have performed in the river course. The Common carp is thought to be a fish of hill impoundments, but its occurrence under such torrential conditions has not been observed earlier.

I shall be greatly obliged if readers kindly write to me if any such occurrence of Common carp has been observed or reported to them.

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